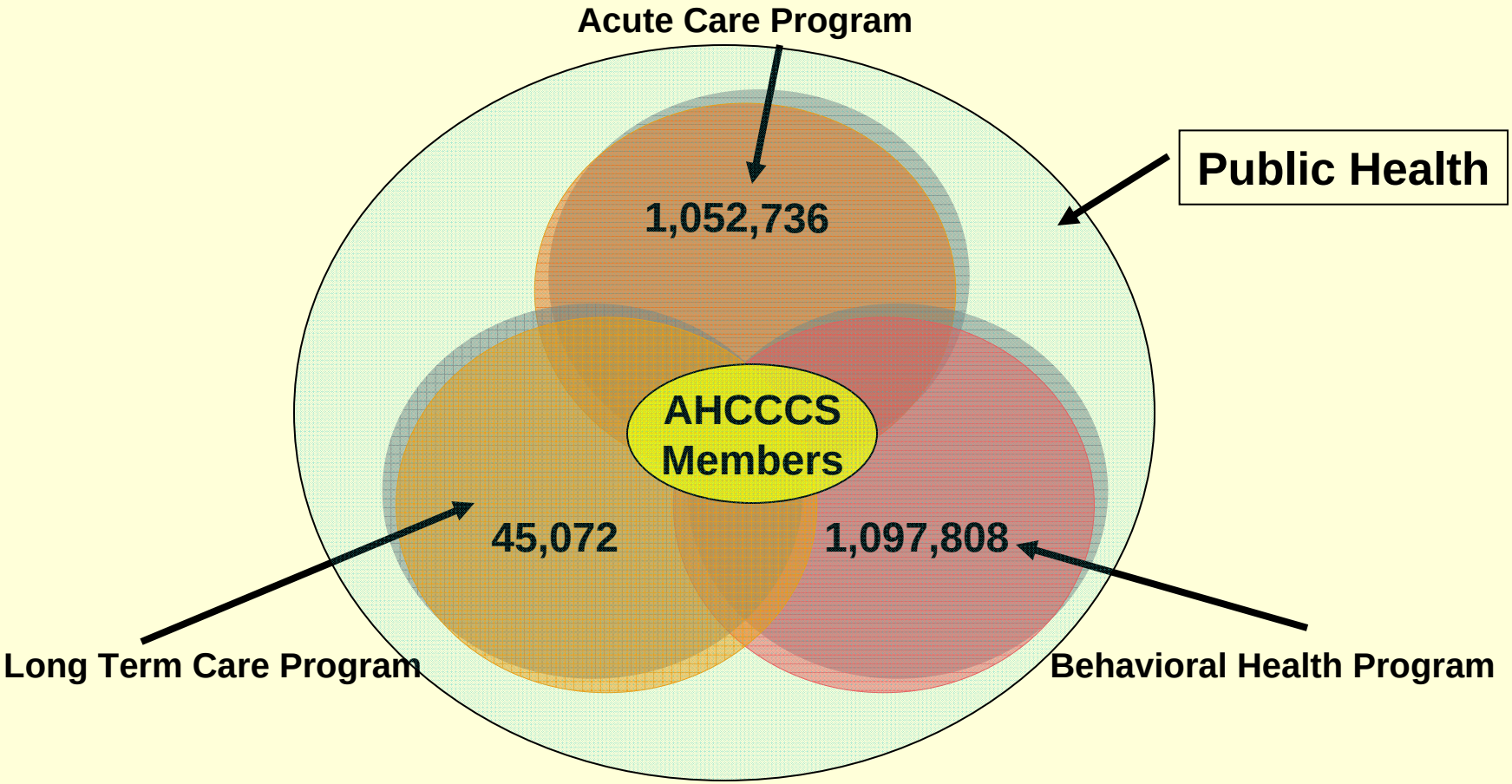
Advancing Clinical and Research Excellence through Health Information Exchanges and Patient Registries

Anthony Rodgers, Director
Arizona Health Care Cost Containment System
June 4th 2008

AHCCCS Program Enrollment



Medicaid Health System Transformation Performance Metrics

- **Lower pharmacy PMPM cost**
- **Lower Diagnostic PMPM cost**
- **Placement of a higher percentage of LTC members in home and community based settings**
- **Lower bed days and admissions per 1000**
- **Reduce long term care PMPM costs**
- **High member satisfaction and self responsibility**
- **Higher provider satisfaction and quality performance**
- **Reduce number of emergency room visits per 1000**
- **Greater healthcare access and improved quality of care**
- **Greater costs transparency and MCO program compliance accountability**
- **Improved administrative efficiency by reducing process cycle times and per transaction cost for administrative activities (e.g. claims, eligibility screening, etc.)**

Top Treatment Groups Last Three Years

Top 15 Treatment Groups	Individuals	Episodes	Total Amount Paid
Schizoaffective disorder	71,989	72,059	$655,359,457
Major Neonatal Disorders, Perinatal origin	64,105	64,628	$407,891,405
Obstetrics Complicated pregnancy w/o C-section	48,294	48,845	$348,273613
Preventive Care	1,136,119	1,607,225	$222,850,379
Mental Retardation	12,791	12,791	$220,651,793
Other neuropsychological or behavioral disorder	125,145	125,949	$212,003,786
Obstetrics Complicated w/C-section	18,207	18,246	$209,261,221
Chronic renal failure w/ ESRD	12,781	12,873	$204,212,980
Type II Diabetes w/ co-morbidity	91,433	91,471	$200,284789
Normal pregnancy w/o C-section	47,285	47,694	$192,818178
Bacterial lung infection, w/ co-morbidity	46,319	49,694	$155,823,510
Diabetes Type I with co-morbidity	24,710	49,326	$149,274,681
Cerebral vascular accident w/o surgery	26,489	26,713	$134,077,482
Autism and child psychoses	14,414	14,416	$130,784,045

The Vision of Health System Transformation in Arizona

Leveraging Technology

Facilitated by the widespread deployment and exchange of electronic health records, interoperable health information systems and the application of new telecommunication and biometric technologies, the opportunity for real and sustain healthcare system transformation has never been greater.

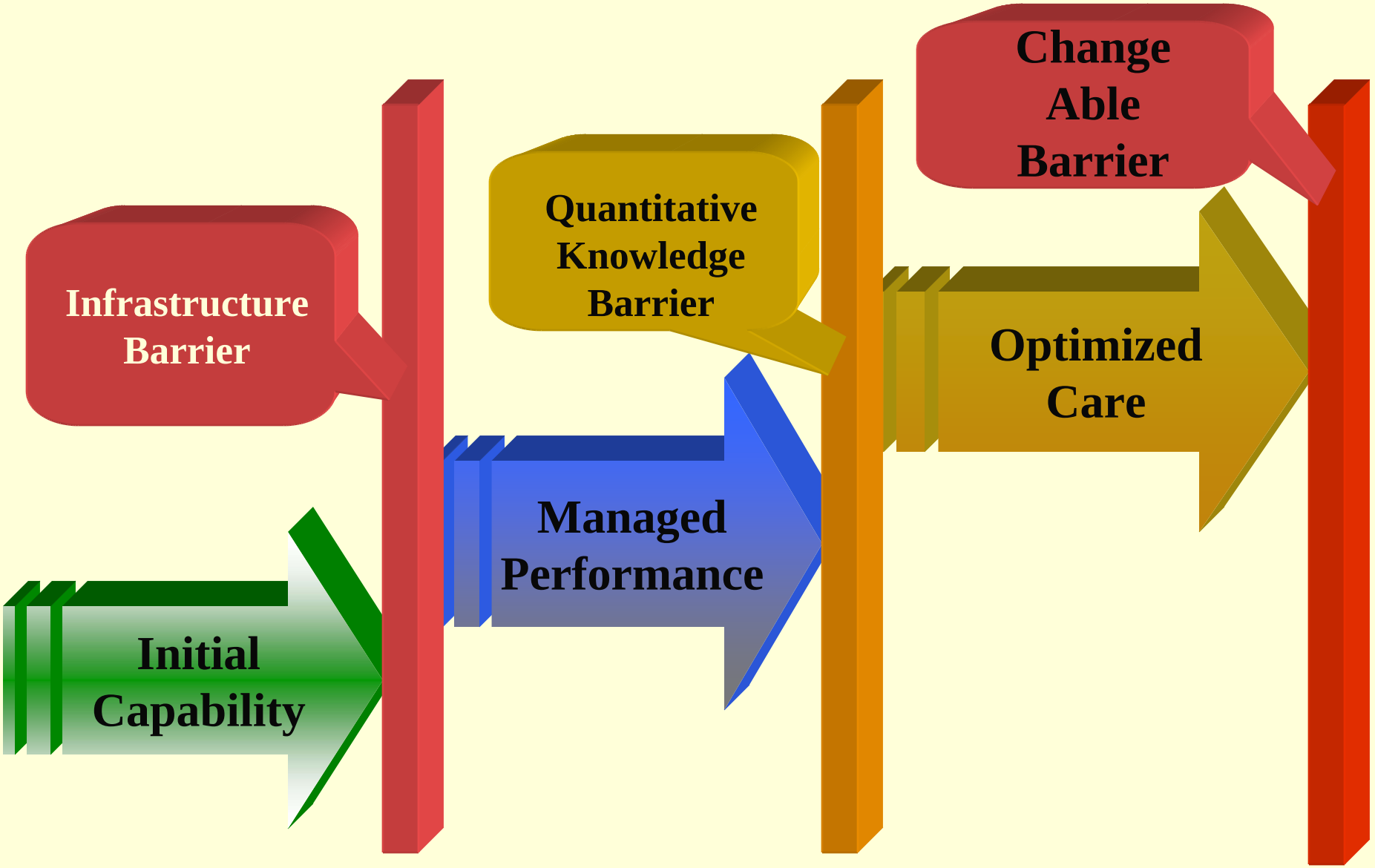
The Purpose of Transforming Arizona Healthcare System

To improve the Arizona's healthcare system efficiency, patient care quality, rapid and continuous adoption of clinical best practices, public health protection, and disaster response effectiveness and resilience.

E-Health Infrastructure Goals to Support Health System Transformation

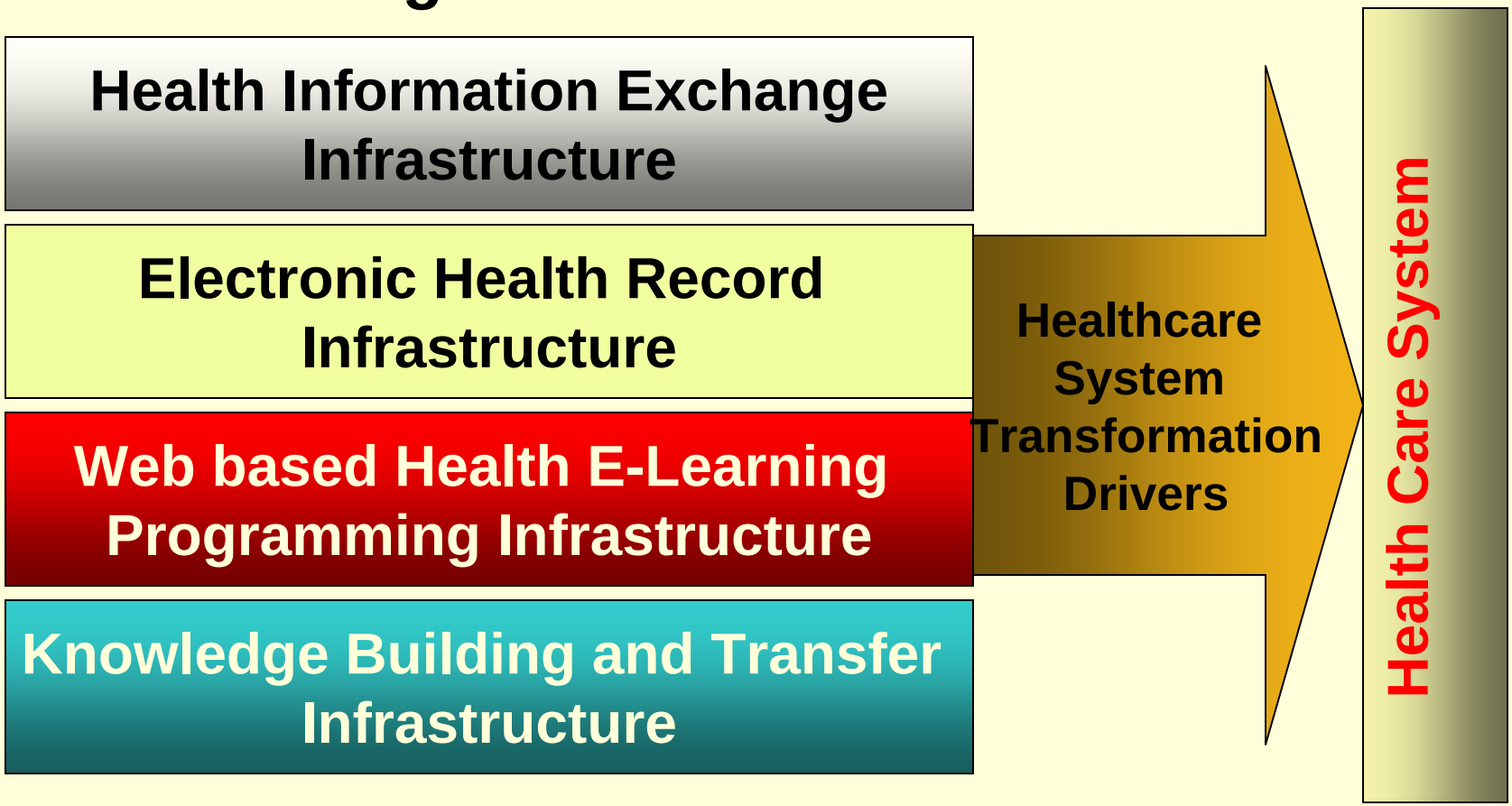
1. *To implement interoperable health information systems and exchange infrastructure.*
2. *Wide spread deployment and use of electronic health records.*
3. *Effective utilization of clinical and patient care decision support tools that are aligned between providers, consumers, and payers.*
4. *To support those that advance the boundaries of our health science knowledge and quality of life.*

Health System Transformation Maturity Model



E-Health Infrastructure of Healthcare System Transformation

Transforming IT Infrastructure

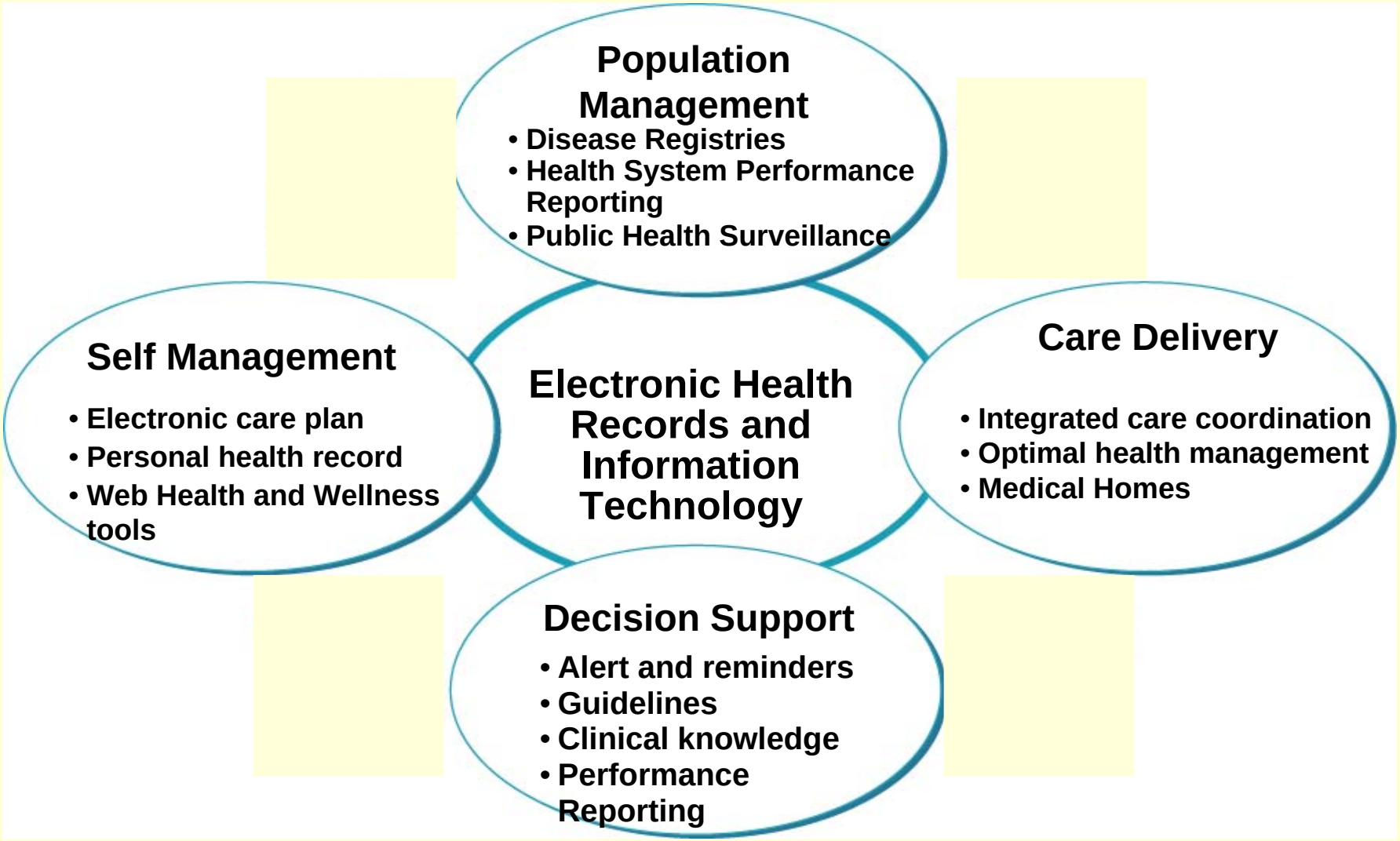


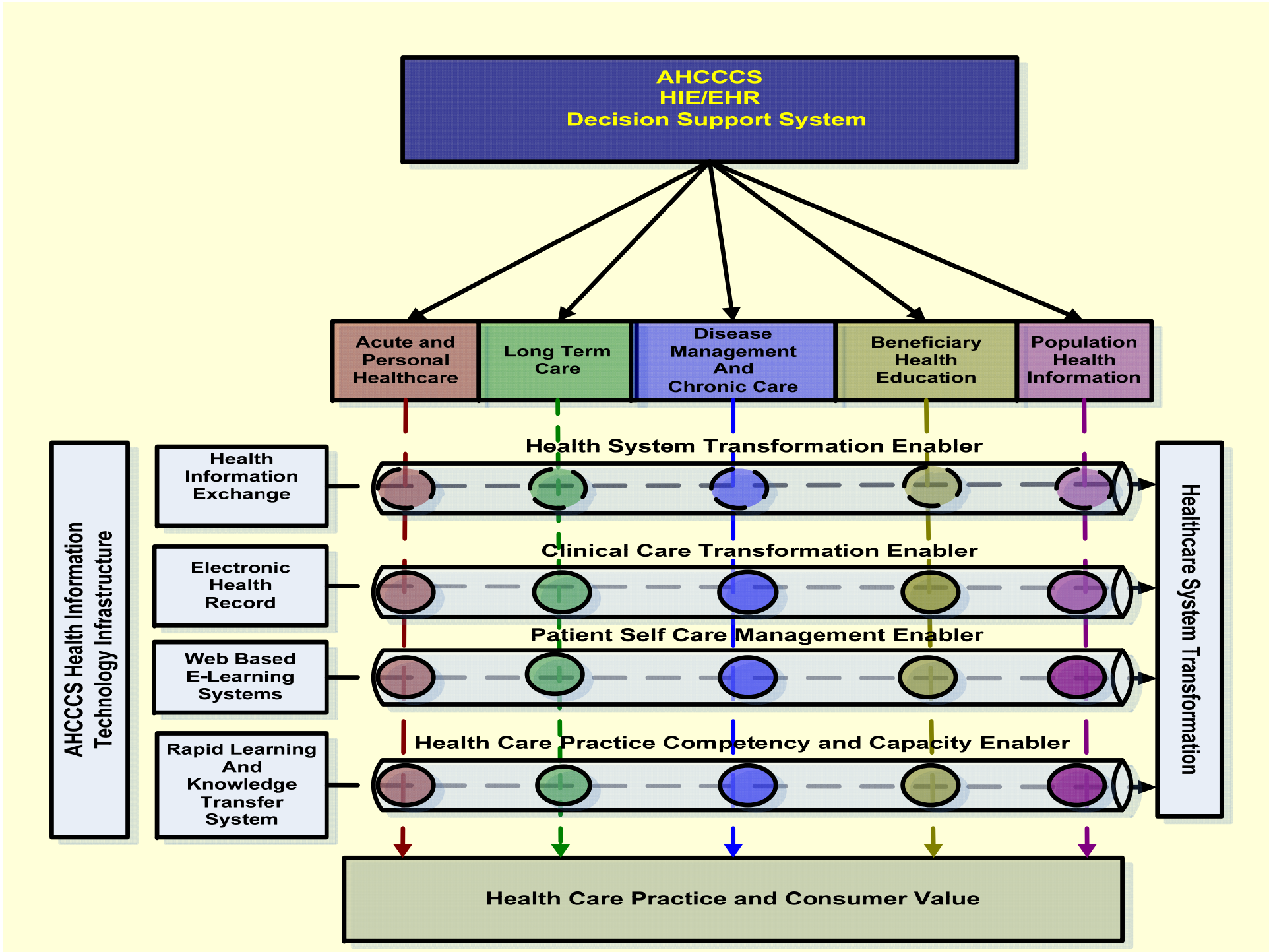
New Organizational Competencies

In this age of electronic information and multi-channels of data exchange and electronic communications AHCCCS must be able to:

1. ***Efficiently convert health data into information*** and health information into knowledge,
2. ***Convert knowledge into action*** that drives continual improvement in healthcare system performance in cost and quality,
3. Demonstrate ***adaptive organizational leadership,***
4. ***Acquire new organizational competencies*** in healthcare informatics,
5. ***Collaborate with the research community*** to engage Arizona communities in participation and priority setting of the Arizona research agenda.

E-Health
System Transformation Enabler



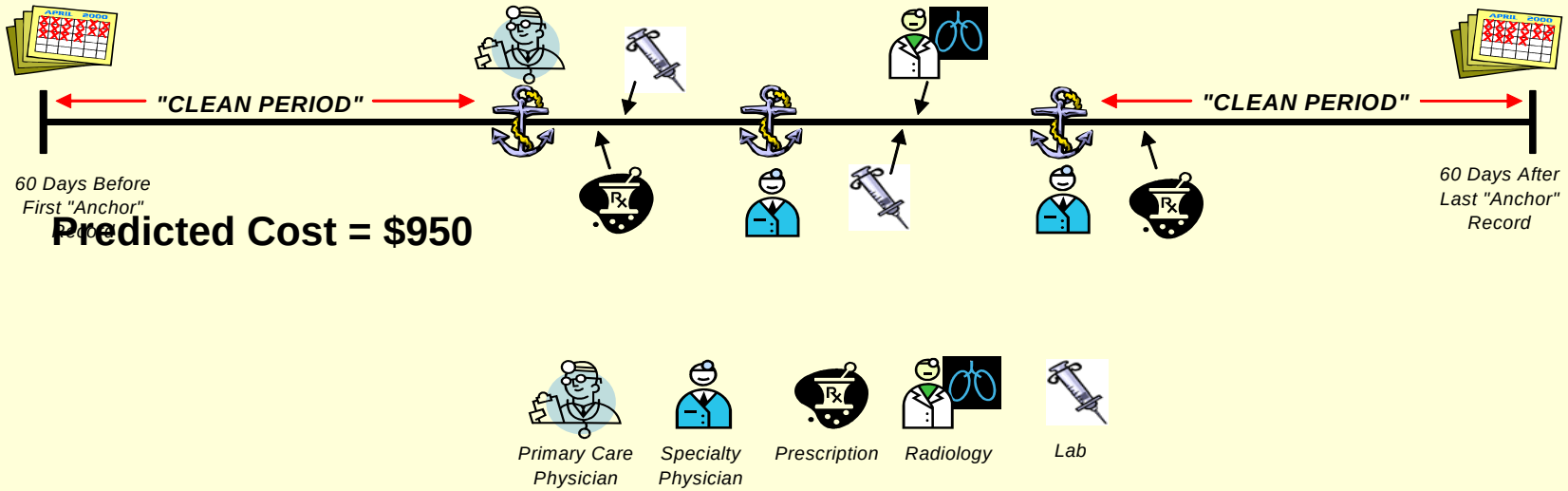

AHCCCS
HIE/EHR
Decision Support System
Acute and Personal Healthcare
Long Term Care
Disease Management And Chronic Care
Beneficiary Health Education
Population Health Information
Health System Transformation Enabler
Clinical Care Transformation Enabler
Patient Self Care Management Enabler
Health Care Practice Competency and Capacity Enabler
Health Information Exchange
Electronic Health Record
Web Based E-Learning Systems
Rapid Learning And Knowledge Transfer System
AHCCCS Health Information Technology Infrastructure
Healthcare System Transformation
Health Care Practice and Consumer Value

Transparency of Cost and Quality

Episode of Care Tracked From Encounter and Clinical Data

THE LIFE OF A CHRONIC SINUSITIS (w/o SURGERY) EPISODE

Outcome Cost = $1,020



First Anchor: You visit your Primary Care Physician for sinusitis. He gives you a prescription and orders blood work. He is concerned that you have a history of sinus infections, so he refers you to an ENT. The PCP visit becomes the first anchor and, because it has been more than 60 days since you have visited him for sinusitis, it begins the episode. The PCP visit, prescription and lab work together form a cluster within the episode.

Second Anchor: You visit the ENT. She orders a sinus X-ray and more blood work. You schedule a follow-up appointment. The ENT visit, X-ray and lab work form another cluster within the same episode.

Third Anchor: You visit the ENT for your follow-up appointment. She tells you that the results of the tests came back negative. She prescribes a preventative medication to help reduce the occurrence of sinusitis. The ENT visit and prescription form another cluster within the same episode.

Conclusion: The medication worked and you have not been back to either doctor within 60 days from your last visit for this illness. Since it has been 60 days since the last anchor record for this illness, the episode is now considered concluded.

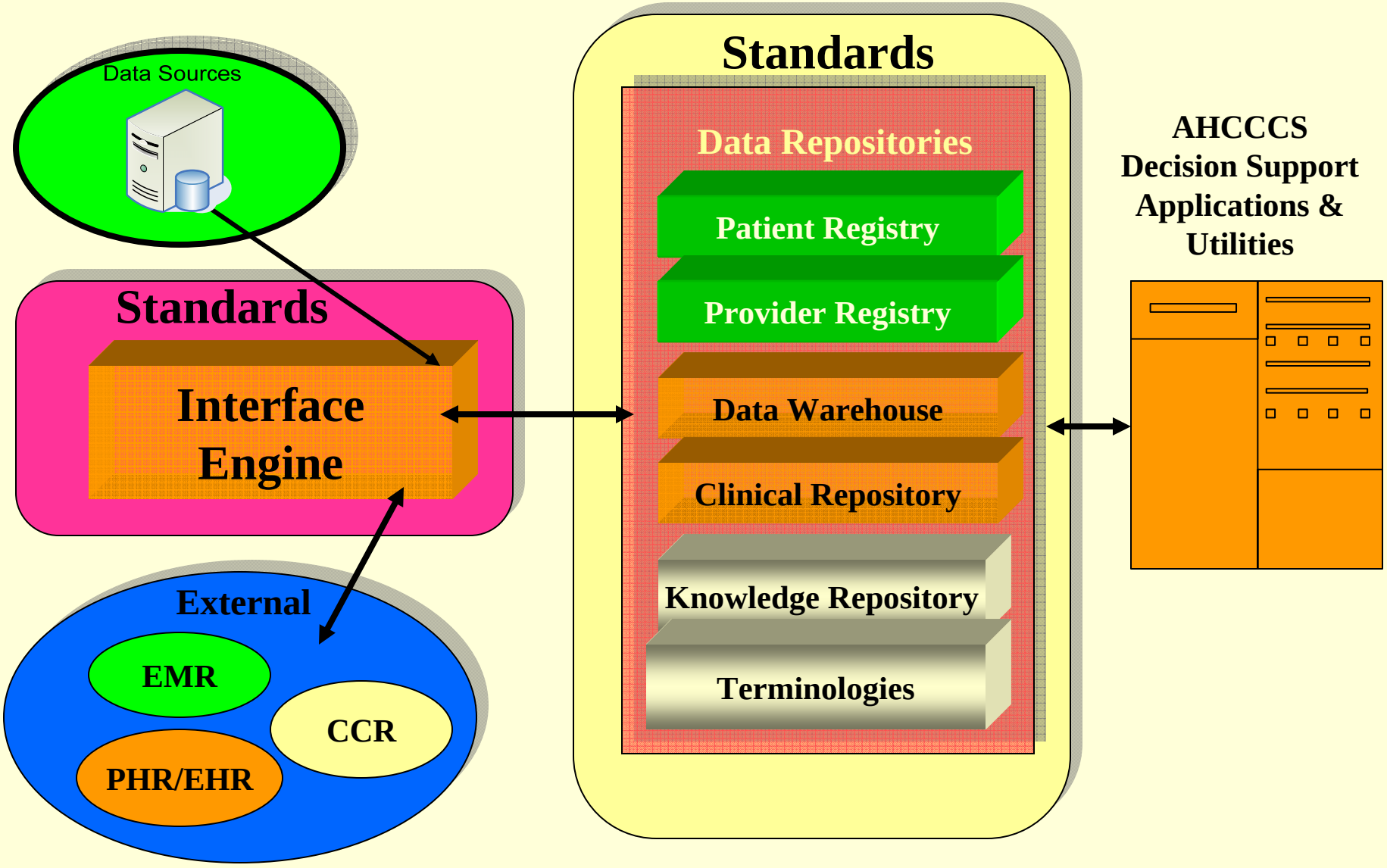
Data Warehouse Capability

- **Administrative Data**
  - Member Eligibility, Identification, and Demographics
  - Capitation and Reimbursement
  - Claims Encounter Data
  - Provider Master Index
- **Future Clinical Data**
  - Medication Data
  - Lab Data
  - Diagnostic Data
  - Patient History
  - Clinical Notes

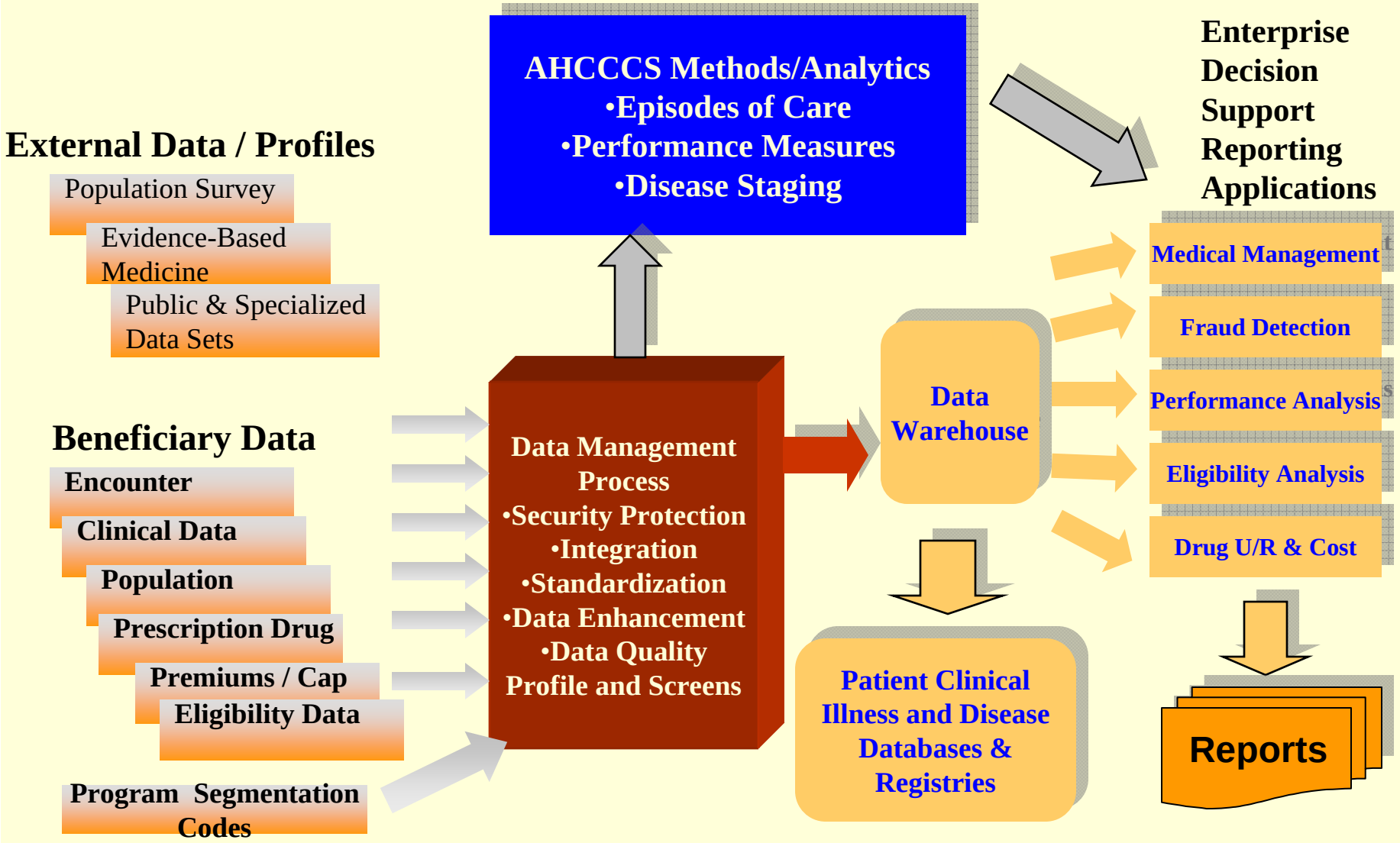
Decision Support Design Objectives

- Use common data warehouse architecture for storage of clinical and administrative data
- Use common data standards (e.g., HL7) and definitions (LOINC, NCPDP, SNOMED) for data exchange and messaging
- Common aligned decision support functionality
- Interface with the electronic health information
- Integrated evidence-based medical protocols rules engine
- Allow both simple and complex configuration of decision support modules and underlying decision support rules engine
- Write once, run anywhere, executable medical knowledge repository
- Web-accessible with common viewer
- Interface with patient disease registries

AHCCCS Electronic Health Record Conceptual Data Repository Relationships



AHCCCS Decision Support Infrastructure



Collaborating to Drive Health System Transformation and Community Engagement in Research

Approach to Supporting Collaboration for Health System Transformation and Research

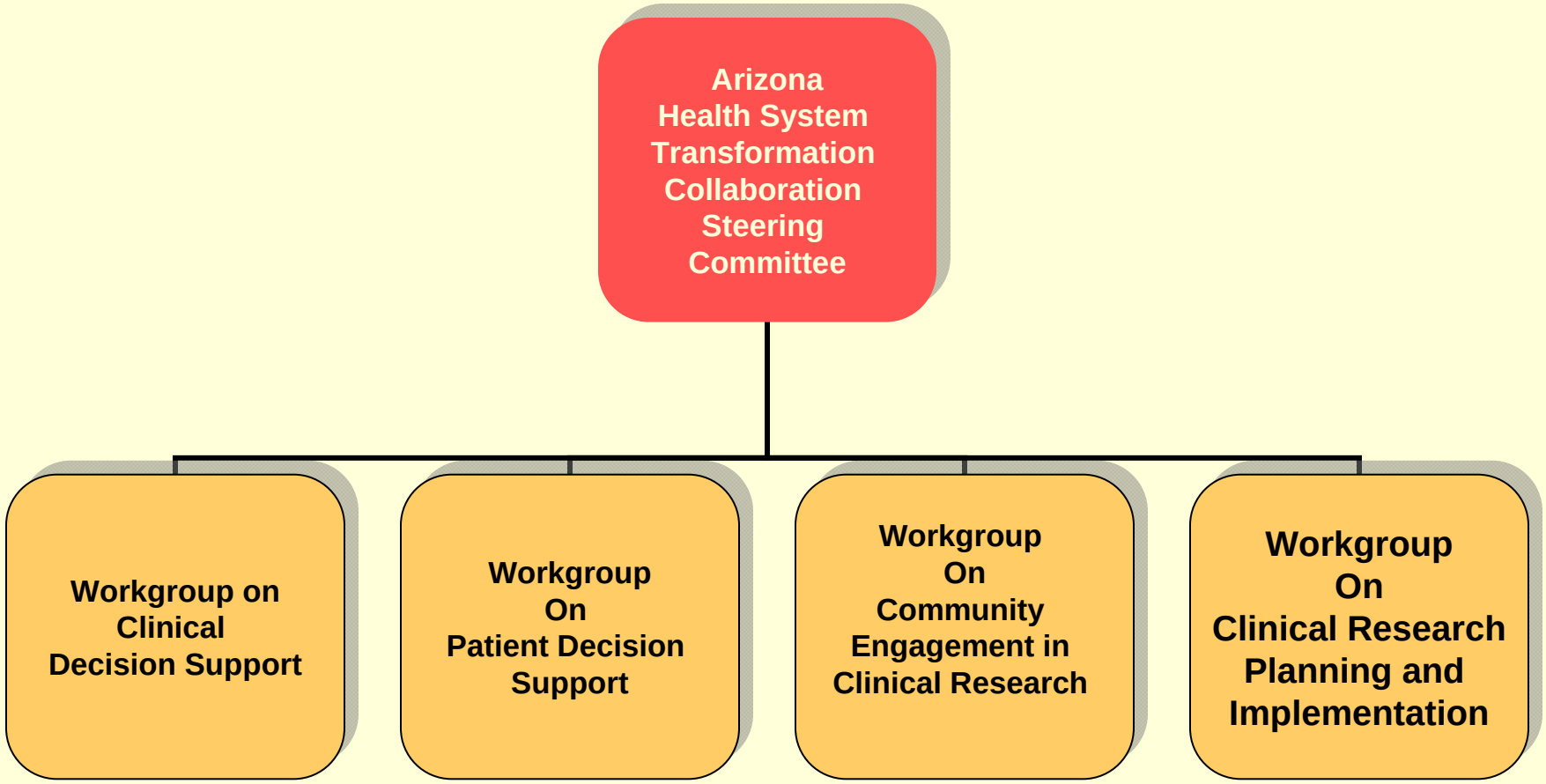
- AHCCCS has entered into agreements with the University of Arizona and ASU to provide expertise and support for the health system transformation and community engagement in research.
- Members for each workgroup will be recruited from AHCCCS, U of A, ASU and HRAA to support the work of the steering committee and workgroups
- Formal workgroup charge and deliverables has been agreed upon and technical and support staff assigned to each workgroup

The Arizona Collaboration on Health System Transformation and Community Research

The purpose/charge of the collaboration is to:

- Develop of models for clinical decision support and provider practice performance improvement.
- Develop models, new applications, and approaches for patient decision support and health education e-learning systems, patient self- support care management, compliance improvement and behavior modification, and raising patient health literacy.
- Develop of models and approaches for community engagement in clinical and translational research.
- Plan and develop new clinical research tools and data bases that take advantage of new clinical information data sources.
- Develop grant, support resources, and partnerships that further the goals and purposes of the collaboration.

Arizona Collaboration on Health System Transformation Community Research Steering Committee and Workgroup Structure



Workgroup Contributors	Role and Responsibility
Myra Muramoto MD MPH, Associate Professor	Principal Investigator responsible for chairing Collaboration Steering Committee
Cheryl Ritenbaugh, PhD MPH, Professor	Chair of Research and Implementation Planning
Mikel Aickin, PhD, Biostatistician	Responsible for literature review and data acquisition and analysis
Randa Kutab MD, MPH, Assistant Professor	Chair of Patient Decision Support Workgroup
Ed Paul MD, Associate Professor	Chair of the Clinical Decision Support Workgroup
Xenia King, PhD, Research Associate Professor	Co-Chair the Community Engagement in Research Workgroup
Leslie Boyer, MD, Associate Professor	Member Research Planning and Implementation work group
Lynn Tomasa PhD, MSW, Assistant Professor	Member Patient Decision Support Workgroup
Tim Connolly, RN,MN, Senior Research Nurse	Project staff support staff for the workgroups
Carol Cantor, Operation Associate	Provides administrative support and logistics
Terri Boitano, Student Research Assistant	Logistical support for workgroups, literature research
Libby Ford, MPH, Senior Research Specialist	Assist with research and report development
Lubna Shaikh, MPH, Research Specialist	Assist with research and report development
Eva Matthews, MPH, Research Specialist	Assist with research and report development

Managing Health System Transformation in Arizona

1960's-1970's

Fee for Service

- Fee For Service
  - Inpatient focus
  - O/P clinic care
  - Low Reimbursement
  - Poor Access and Quality
  - Little oversight
- No organized networks
- Focus on paying claims
- Little Medical Management

1980's-1990's

Managed Care

- Prepaid healthcare
  - More comprehensive benefits
  - More choice and coverage
- Contracted Network
- Focus on cost control and preventive care
  - Gatekeeper
  - Utilization management
  - Medical Management

2000+

Integrated Health

Patient Care Centered
- Personalized Health Care
- Productive and informed interactions between Patient and Provider
- Cost and Quality Transparency
- Accessible/Affordable Choices
- Aligned Incentives for wellness

Multiple integrated network and community resources

Aligned cost management processes

Rapid deployment of new knowledge and best practices in quality care

Patient and provider interaction
- Information focus
- Aligned care management
- E-health capable

Vision of the Transformation of Medicaid

Electronic Health Record

Informed, Activated Patient

Productive Interactions

Prepared Clinical Team

Clinical and Value Decision Support Tools

Our first care is your healthcare